

Monitoring apparatus for combat sport

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Abstract of GB2321003

Apparatus for monitoring blows administered in a contact sport such as boxing comprises sensor means (5) carried by a glove (6) adapted to sense at least the strength of a blow, and receptor means adapted to receive input from the sensor means whereby to monitor the input for assessing the blow. The receptor means may comprise a computer and may be located outside a boxing ring, receiving signals from the sensor means (5) through a transmitter (8). The sensor means may be located in a head-guard rather than a glove.

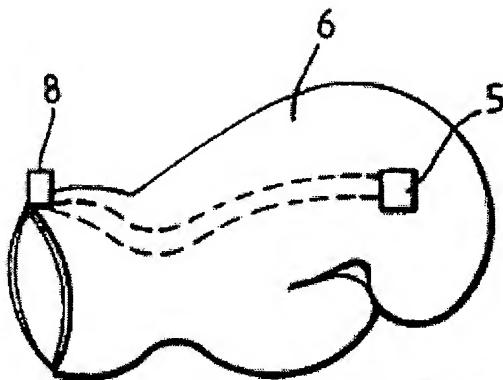


FIG. 2

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(54) Abstract Title

Monitoring apparatus for combat sport

(57) Apparatus for monitoring blows administered in a contact sport such as boxing comprises sensor means (5) carried by a glove (6) adapted to sense at least the strength of a blow, and receptor means adapted to receive input from the sensor means whereby to monitor the input for assessing the blow. The receptor means may comprise a computer and may be located outside a boxing ring, receiving signals from the sensor means (5) through a transmitter (8). The sensor means may be located in a head-guard rather than a glove.

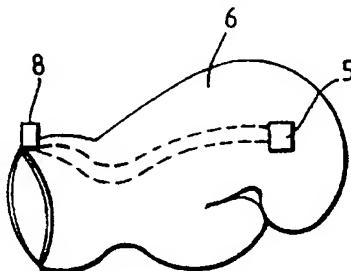


FIG. 2

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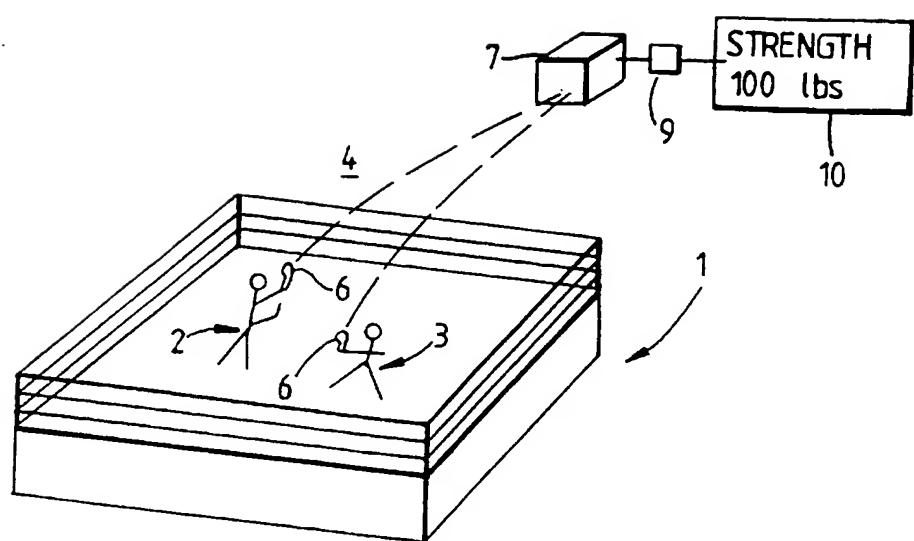


FIG. 1

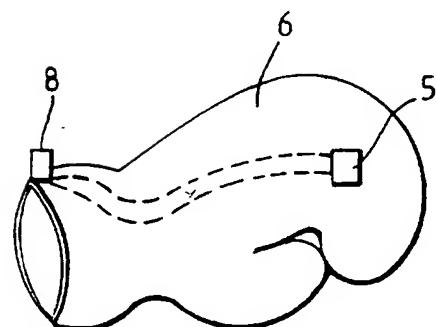


FIG. 2

COMBAT SPORT APPARATUS

The invention relates to combat sport apparatus, and particularly to apparatus for monitoring blows administered in a personal combat sport such as boxing.

In sport such as boxing there is continual possibility of injury to a participant, and such an injury can be fatal, or can lead to permanent physical and/or mental impairment. This is due to the fact that in boxing the head is a constant target, which can naturally lead to brain damage.

Moreover, the tendency to cause damage is currently enhanced because modern training and dietary methods mean that participants are stronger, fitter and faster. Also, with the financial rewards nowadays possible, more people tend to participate, again with the result that the incidence of injury can increase.

It is accordingly an object of the invention to seek to obviate these disadvantages.

According to a first aspect of the invention, it is possible to provide apparatus for monitoring blows administered in a personal combat sport, comprising sensor means adapted to sense at least the strength of a blow, and receptor means adapted to receive input from the sensor means whereby to monitor the input for assessing the blow.

Using the invention, it is possible to limit damage, for each individual, each individual having a different limit, before fatality or serious damage ensues.

The sensor means and receptor means may comprise separate means which are operatively connectible. This provides for remote monitoring of the action during

a bout.

There may be electro magnetic transmitter means operatively connectible between the sensor means and receptor means. This provides a relatively positive yet inexpensive way to monitor a signal.

The electromagnetic transmitter means may comprise radio means.

The receptor means may comprise transducer means adapted to convert a signal from the sensor means to a desired format. Thus the strength of a blow, the number of blows, the cumulative number of blows or the like may be monitored.

The transducer means may comprise a computer device. This provides a relatively simple way to record information.

The apparatus may comprise a display screen. This provides a means of informing a doctor, a judge or an audience of the state of a participant.

The desired format may comprise characteristics of a blow, particularly the strength and/or number of a blow. Thus a boxer can be individually monitored as regards the "punishment" he is receiving particularly when the desired format may comprise the cumulative effect of a blow.

According to a second aspect of the invention there is provided a boxing glove, comprising sensor means adapted to sense at least the strength of a blow.

Apparatus for monitoring blows administered in a personal combat sport, such as boxing, is hereinafter described, by way of example, with reference to the accompanying drawings.

Fig. 1 is a schematic perspective view of a boxing ring in which boxers participate in a bout, the blows administered being monitored using apparatus according to the invention; and

Fig. 2 is, to a larger scale, a schematic perspective view of a boxing glove according to the invention.

Referring to the drawings, particularly Fig. 1, there is shown a boxing ring 1, in which two boxers 2, 3 participate in a bout, and in which there is apparatus 4' for monitoring the blows administered, comprising sensor means 5 carried by a glove 6, Fig. 2, adapted to sense at least the strength of a blow, and receptor means 7 adapted to receive input from the sensor means 5 whereby to monitor the input for assessing the blow. Thus a blow by boxer 2 on boxer 3 provides input to the receptor means 7.

The sensor means 6 may be a piezo-electric device buried in the glove 6 so as not itself to inflict additional injury. The piezo-electric device registers the blow and converts the pressure thereof into an electric signal which is passed to a radio transmitter 8, which is in the embodiment also carried by the glove 6. The radio transmitter 8 transmits a signal to the receptor means, or receiver, which may be positioned at any suitable position, alongside the ring 1, above the ring, or remote therefrom.

The receiver 7 provides an input to a transducer 9 such as a computer which can determine, and record, parameters related to the blow, such as the strength of the blow, its number in a sequence of blows landed during the bout, and the cumulative effect over the career of a particular boxer 2 or 3. The computer 9 may cause the information to be accorded a visual, audio, or audio/visual display, which can be viewed by one person, such as a doctor, and which may

also be displayed by a display means 10 to the audience. The computer also stores the input so that a boxer's history can be built up.

Thus using the invention 4 as described herein with reference to the drawings, it is possible to provide for a registration of punches, perhaps over a certain strength, to the head of a boxer from the first bout of their career, both as an amateur and/or as a professional.

This register, personal to each boxer, male or female, may then provide basic evidence and act as a regulation for both a boxer, his or her medical adviser and a commission governing the sport. When the register indicates that a boxer has absorbed a certain number of blows of and over a particular strength, his or her career can be halted, for health reasons. The precise strength and number of punches is monitored using the gloves 6 of Fig. 2.

It will be understood that modifications can be made. Thus the sensor means may be in a head-guard, particularly for use in amateur bouts.

Also, the transmitter 8 may be carried on the boxer's person, other than on the glove 6, for example at the waist band of shorts.

CLAIMS

1. Apparatus for monitoring blows administered in a personal combat sport, comprising sensor means adapted to sense at least the strength of a blow, and receptor means adapted to receive input from the sensor means whereby to monitor the input for assessing the blow.
2. Apparatus according to Claim 1, the sensor means and receptor means comprising separate means which are operatively connectible.
3. Apparatus according to Claim 2, there being electromagnetic transmitter means operatively connectible between the sensor means and receptor means.
4. Apparatus according to Claim 3, the electromagnetic transmitter means comprising radio means.
5. Apparatus according to Claim 4, the receptor means comprising transducer means adapted to convert a signal from the sensor means to a desired format.
6. Apparatus according to Claim 5, the transducer means comprising a computer device.
7. Apparatus according to Claim 6, comprising a display screen.
8. Apparatus according to any of Claims 5 to 7, the desired format comprising characteristics of a blow.
9. Apparatus according to Claim 8, the desired format comprising the

strength and/or number of a blow.

10. Apparatus according to Claim 8 or Claim 9, the desired format comprising the cumulative effect of a blow.

11. Apparatus for monitoring blows in a personal combat sport, substantially as hereinbefore described with reference to the accompanying drawings.

12. A boxing glove, comprising sensor means adapted to sense at least the strength of a blow.

13. A boxing glove, substantially as hereinbefore described with reference to the accompanying drawings.



The
Patent
Office

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Claims searched: 1-13

Examiner: Alex Littlejohn
Date of search: 7 April 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Int Cl (Ed.6): A41D 13/00, 13/10; A63B 71/06, 71/08, 71/10, 71/12, 71/14

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB2220749A (Medmark) see whole document	1-10
X	WO90/09218A1 (Foley) see whole document	1-10
X	US4883271 (French) see whole document, especially col 8 line 42	1-10,12
X	US4233689 (Baron) see whole document	1-10
X	WPI Abstract Accession No. 96-271670(28) & JP 080112391 A (Kaneko) 05.07.96 (see abstract)	1-10
X	WPI Abstract Accession No. 96-271669(28) & JP 080112390 A (Kaneko) 05.07.96 (see abstract)	1-10
X	WPI Abstract Accession No. 96-271668(28) & JP 080112389 A (Kaneko) 05.07.96 (see abstract)	1-10

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